



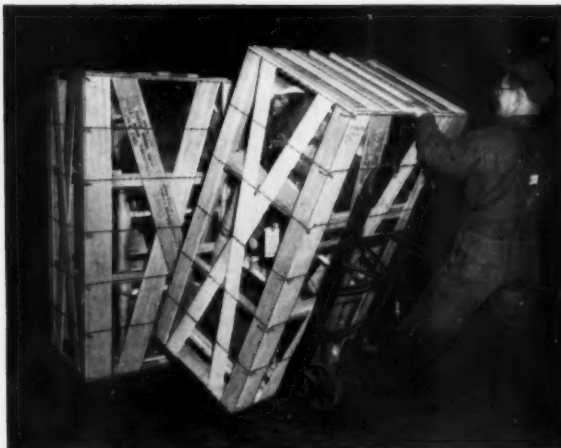
April 1953

sale transit

FROM ASSEMBLY LINE TO FINAL CUSTOMER



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Pressure Sterilizer container saves 17% of cost of packaging materials, 60% of packaging time, 9% of shipping weight. Customer uses eleven other General Box engineered containers.



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These are results obtained by practical, imaginative container engineers who have the finest of design and testing facilities to work with. They create custom-designed containers for dozens of different products, month in and month out.

Chances are it will pay you well to find out how much better your containers can be. It's easy to do. Best and fastest way is to have a General Box man call. There's no obligation. Consult your local directory, or

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safe transit

A monthly trade publication section devoted to improved packaging and shipping and materials handling practices in the home appliance and metal products manufacturing field.

Plant experience information for all executives and plant men interested in the problem of packaging and shipping improvement and loss prevention.

Complete information on the National Safe Transit pre-shipment testing program for packaged finished products, and detailed progress reports of divisions and sub-committees of the National Safe Transit Committee.

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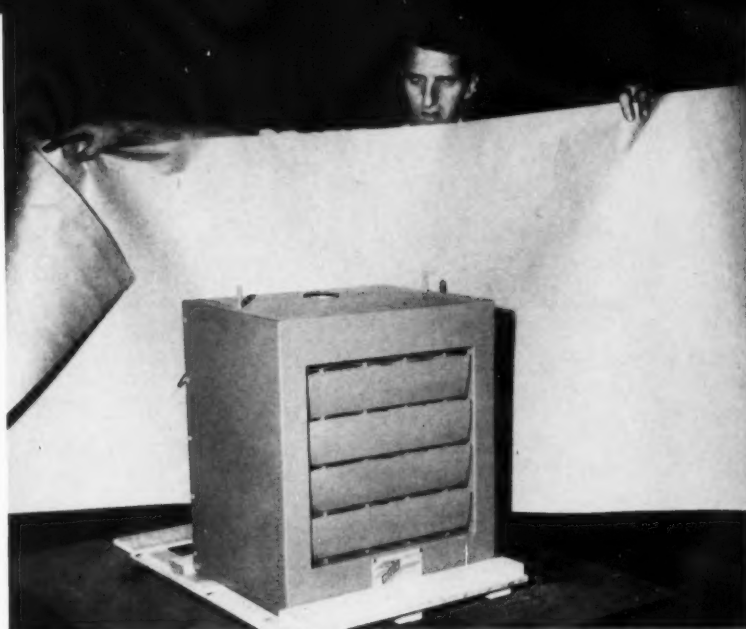
OFFICIAL 1955 LISTING OF

CERTIFIED LABORATORIES . . ST-17

NST MAIL BAG

ST-17

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Grid unit heaters — made in 11 different models by the D. J. Murray Manufacturing Co., of Wausau, Wisconsin — range in shipping weight from 150 to 1070 lbs. Despite the variance in size of the models, only five different sizes of wirebound crates are used to pack the unit heaters for shipment. Thus the problem of crate storage before use is simplified with considerable economy of space.

The model C1-1200 unit heater shown being enclosed in protective paper is the smallest of three different size heaters that are packed in identical wrap-around containers. The one-piece wrap-around blank that forms the four sides of the crate for models C1-1200, C1-1500 and C1-1520 unit heaters is easily folded into shape, placed in position and closed with twisted wire closures by only one man. Because the blank is snugly wrapped around the crate base, it is not affected by the variations in dimensions of the three units themselves. A crate top is used in packing the largest of the three afore-mentioned models, but pre-cut special wooden interior packing is used instead for the other two models. The "solid" section of the otherwise open crates provides for protection against damage by external objects to the front of the unit heaters which are bolted securely to the crate base.

A. W. Plier, president and general manager, reports that his company has not experienced any shipping damage due to container failure under ordinary shipping and handling conditions. Plier also reports that they can safely stack their 1070-lb. crated Grid heaters three high in their warehouse.





One of two similar water heater assembly and packaging lines at Rheem's Chicago plant.

Close-up of pit station where the bottom cap is strapped to the container tube.



Suspended strapping tool and reel are used at the top cap strapping station.



AT their Chicago plant, Rheem Manufacturing Company is turning out a growing volume of gas and electric water heaters — both glass-lined (see January 1955 finish) and with galvanized tanks. To keep up with growing production volume, Rheem packaging engineers are continually working to improve their packaging techniques.

Two types of containers are currently being used — corrugated cartons used principally for gas water heaters, and wirebound crates for large electric water heaters.

The first operation concerned with packaging — locating the heaters on their shipping base — is performed at the head of the two final assembly and packaging lines. Here finished tanks, lying on their sides, are delivered on waist-high roller conveyors. Special hydraulic devices are used to lower the tanks into an upright position (onto the shipping base) on the assembly line floor-level roller conveyors.

Following final assembly (addition of insulation, exterior jackets, controls and tops), the heaters are ready for final packaging.

Conveyorized strapping for cartons

Gas water heaters are packed in interlocking flange containers. The key to this method is a specially-designed split conveyor section which

Packaging and

progress report on packaging

illustrated

by Matt E. Hene

fits into the assembly conveyor at a point where it crosses a strapping pit. At this point the width of the special conveyor section can be expanded to receive containers of varying widths. (For a history of this development, read "Rheem Installs Conveyorized Strapping," July 1954 finish).

Each strapping station — conveyor section and suspended top cap strapping position — is operated by two men. Water heaters approach the first station on the conveyor, already positioned on the bottom cap and riding on thin wood runners which are a part of the cap assembly. The tube of the container is dropped over the heater as it approaches the conveyorized strapping station.

Here, the two men in the pit position the bottom strap, and fold the



loading at Rheem

ng dding methods for water heaters

rated photos

ue ASSOCIATE EDITOR



side flanges, which are then held in position by guide rails on the conveyor. As the unit nears the strapping position, the front and rear flanges are folded and held in position for strapping by stops which operate automatically. With all flanges tightly folded and held, the strap is quickly placed around the container, tensioned, sealed, and cut off. No strapping is wasted as the end of the coil remains in the tool, ready for the next container.

As the operator disengages the strapping machine, the forward end-stop automatically drops between roller sections, and the unit is pushed on the roller conveyor to the top cap strapping station.

Two men quickly install a wooden cross frame to center the heater in the container, put on the cap, fold

it: Small heaters are delivered two-at-a-time to the warehouse area by hand truck.

low: Flue vent is enclosed in paper bag and stored in bottom of shipping container.



Stacking operation for 82-gallon electric water heaters—the largest water heaters assembled in the Chicago plant.

the flanges and position the flange-holding jig. Then the strapping tool is engaged under the flange of the container and the strapping tensioned, sealed and cut. The strapping tool as well as the strapping reel are sus-

pended from the ceiling for easy accessibility.

Crating electric water heaters

Packaging operations for large electric water heaters, to be shipped

Stacked water heaters in the plant's warehouse area awaiting shipping instructions.





Left: Slat skids on containers permit packaged units to be safely pushed to the shipping dock with a fork truck.

Below: Each quarter-load in boxcar is bulkheaded and secured with bands of strapping.

in wirebound crates, also begin with the lowering of the finished tanks onto the shipping crate base.

Following final assembly, a sheet of protective paper is placed over the heater top and taped in position. The top of the crate is then placed in position on the heater, and the one-piece wrap-around blank that forms the four sides is wrapped around the heater. The crate is then closed with wire loop fasteners.

Warehousing and carloading

The larger packaged heaters are delivered to the nearby warehouse area one at a time by hand truck. The smaller units are delivered two at a time on hand trucks equipped with special wood braces to increase the support width. Lift trucks are used to stack the heaters three-high in the warehouse until ready for shipment.

Since both the cartons and crates have attached slat skids, this permits 6 in-line packaged heaters to be pushed to the shipping dock by fork truck. In this operation, the truck's forks are lowered to floor level where they engage the outside slats of the nearest in-line shipping container.

ST-6

od is fast, economical and safe way to move packaged water heaters in quantity from storage to the dock.

In carloading, Rheem uses the quarter-load method and normally ships mixed lots of heating equipment, water heaters and water soft-

teners. Each quarter-load is bulkheaded and strapped in position. Rheem feels that the quarter-load method is insurance against possible extensive carload damage should a car be humped.





Tough to pack it?... DRUMPAK IT!



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finish APRIL • 1955

ST-7



SIGNODE Strapping Station Handles Interlocking Flange Containers—2 a Minute

Here is high-speed, conveyORIZED production line packaging equipment that enables two men to fold, hold and strap *two* complete interlocking flange containers per minute . . . 120 an hour!

S-75 handles containers up to 41" x 50"

This conveyORIZED strapping station can handle containers ranging in width from 18" to 41" . . . and in length from 18" to 50". Adjustment for width is made in a matter of seconds. Adjustment for length is provided automatically by a set of five spring-loaded stops.

Offers new ways to cut costs

The S-75 Strapping Station breaks the bottleneck that formerly restricted the use of interlocking flange containers,

and the savings in strapping time, strap used, manpower and handling time alone will quickly pay for this low-cost, profitable conveyORIZED strapping installation. For complete information write:

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 2639 N. Western Ave., Chicago 47, Ill.

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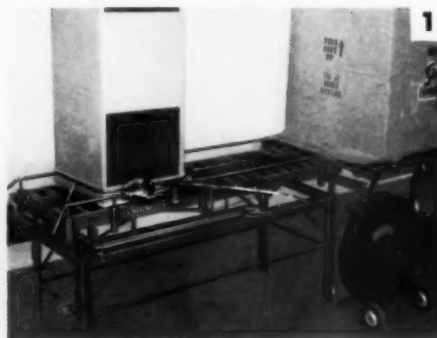
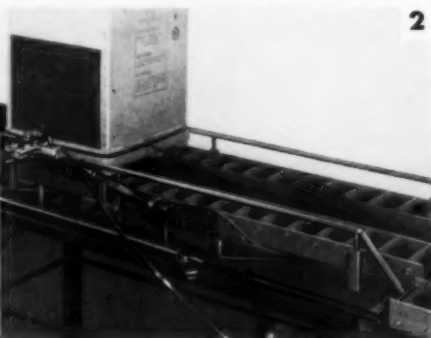
SECURITY IN SHIPPING

In Canada: Canadian Steel Strapping Co., Ltd., Montreal, Toronto
 Offices Coast to Coast. Foreign Subsidiaries and Distributors World-Wide

(3) Top cap is folded and held in position by a simple jig. Strapping tool, suspended from a spring balancer, tensions and seals the draped strapping. . .

(1 & 2) Rails hold folded side flaps. The forward stop (photo #1) holds front flap. Spring-loaded stops (photo #2) rise automatically as container passes over them to hold rear flap. Steel strapping is passed around the container, and is tensioned and sealed by a Signode seal-

feed strapping machine. A special tool mount and balance arm hold the machine at the right level for strapping. When the machine is depressed it is disengaged and the front stop is released, so the container can move on down the line to the next position.



ST-8

APRIL • 1955 finish

AMA plans for largest packaging show

over 30,000 persons expected at American Management Association show in Chicago

PRACTICALLY every aspect of the \$10-billion-a-year packaging industry will be explored in Chicago the week of April 18 when the American Management Association holds its 24th National Packaging Exposition and concurrent Packaging Conference.

Some 30,000 persons are expected to be on hand for the Exposition which will be held at the International Amphitheatre, April 18-21. In addition, some 1,500 specialists in packaging, shipping, traffic management and materials handling will discuss packaging problems and techniques

at the Conference to be held at the Palmer House, April 18-20.

Emphasis on industrial packaging

More than 380 exhibitors have already reserved more than 95 per cent of the 140,000 sq. ft. laid out for the exposition at the Amphitheatre. As compared to previous years, the 1955 exposition is expected to put greater emphasis on the packaging of industrial goods. Space reservations indicate a somewhat higher ratio of industrial to consumer package exhibitors than in the past. The exposition is open without admittance charge to

anyone with a business affiliation.

Conference topics

The following companies will be among those who will have some of their specialists tell how they solved their packaging and materials handling problems:

General Electric makes 200,000 different industrial products. The director of its industrial packaging laboratory will emphasize how research, testing and development are correlated. He will summarize the equipment used in devising packages for over-the-road shipment, ware-

AMA's packaging planning council met recently to discuss plans for packaging conference. Left to right, seated, are: R. A. O'Reilly, Jr., General Motors; C. W. Kaufman, Kraft Foods; R. C. Reed, Texas Co.; W. L. Romney, Procter & Gamble, and vice president in charge of AMA packaging division; J. R. Whitaker, American Stores; and A. A. McCurray, National Biscuit. Standing, left to right, are: J. F. Apsey, Jr., Black & Decker; C. W. Harper, Sears-Roebuck; J. A. Warren, technical adviser to AMA packaging division; C. W. Evans, Studebaker; Paul O. Vogt, General Electric; C. L. Rumberger, Heinz; J. E. Marmon, Eli Lilly Co.; Robert de S. Couch, General Foods; and A. K. Thorn, manager of AMA packaging division. Present at meeting, but not shown, were Donald W. Pennock, Carrier, and A. D. Murphy, Standard Oil.



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SHIPPING INSURANCE**

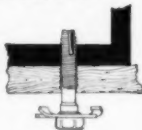


pre-assembled ... securely staked

will not turn with vibration

● You reduce shipping damage... minimize enamel chippage... when your appliances are firmly secured to crates with the new National Lock crating bolt. Bolt is sturdily staked to specially-formed hardened spring steel washer. Washer lugs bite into the wood, preventing bolt from turning. Also available as a nut and washer staked assembly... with lugs to prevent loosening. (Leading manufacturers have proven that loosening torque is greater than tightening torque.) Put National Lock crating bolts to the test in *your* shipping room NOW.

**METAL THREAD-CUTTING FEATURE
SAVES CRATING TIME, CUTS COSTS**

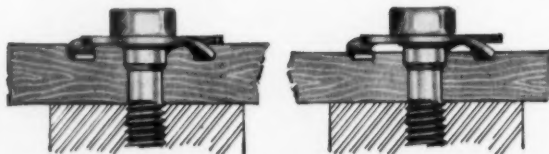


Bolt is self-threading. Can be quickly and easily turned into metal foot or base of appliance. Nut is not required.

lugs will not let go...

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AFTER SHRINKAGE



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housing, materials handling, and production-line packing.

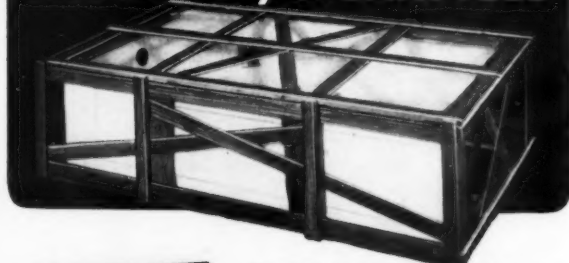
Whirlpool and U. S. Radiator will have representatives on a panel on "Cost Reduction Methods in Industrial Packaging." They will tell their methods of blending safety with economy. They will stress accounting techniques to reveal waste; the advantages of automation where possible; and how to design the product and the package concurrently.

National Cash Register has shipped more than 21,000 accounting machines throughout the United States and overseas—with only three complaints. A company spokesman will give full details on the box that made this record possible. The new box also cut shipping weight by 133 pounds, and saved \$100,000 a year on freight and replacement of containers.

GM Ternstedt Division — ships some 1,000 parts to auto assembly plants. A spokesman will describe how Ternstedt devised: (1) a flexible pallet pack that may be used for many different items by merely changing inner-pack components, (2) a floating innerpack that reduced damage to fragile parts by 75%, (3) a "no block" pallet that has reduced storage area and damage potential along with improved safety in handling, and (4) a color-coded tape that aided stock rotation.

Another session will be concerned with "Making the Most of Packaging Machinery", with the panel headed by men from firms successfully using this equipment.

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shipping crates for
safe delivery of BATH TUBS**



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To meet your specific requirements and to protect your product.

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In our own Certified N.S.T. Laboratory.

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Exclusive B-G Tight Corner develops extra strength.

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Factory assembled in 3 sections. Palletized for quicker handling and storage.

Time Saver

Hinged corners and pre-drilled nail holes for fast assembly.

Over 30 Years of Packaging Engineering Experience



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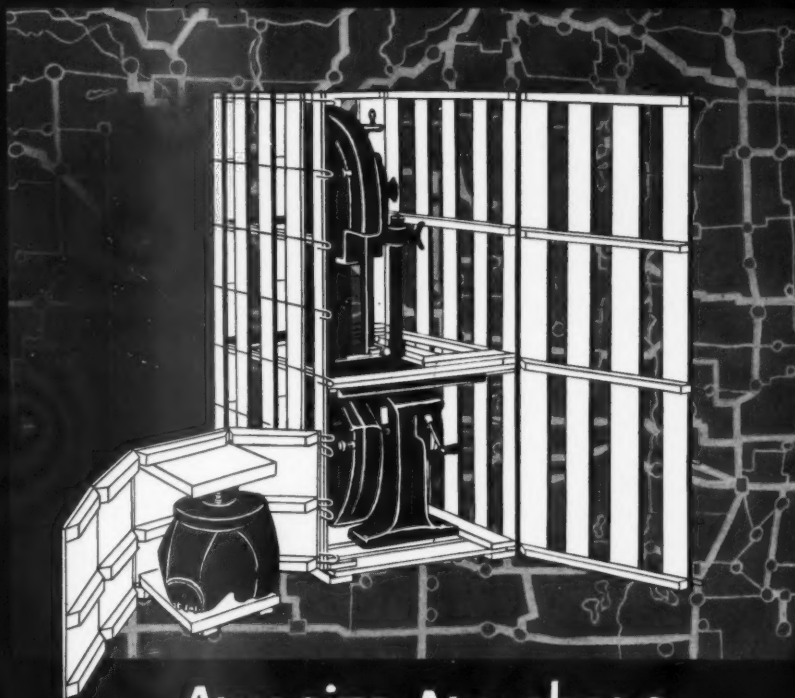


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No matter where it's bound
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There is practically no limit to what you can ship in a Wirebound . . . for Wirebound is *a most versatile container*. Wirebounds combine the strength of steel wire with the resiliency of wood in limitless combinations. For example, look at the rock bit box on the left. This small, rugged Wirebound eliminated previous stacking failure and in-transit damage losses. So did the Wirebound band saw crate on the right. For greater safety and greater savings, investigate Wirebounds . . . today!

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- ☐ Have a sales engineer give me the whole story
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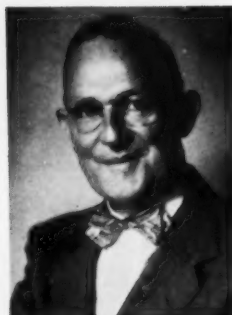
NAME CHAIRMEN FOR NATIONAL PACKAGING-HANDLING SHOW



A. C. BEARDSSELL



W. J. BALSTER



C. R. REED

WITH plans finalized to bring the 10th anniversary meeting of the Society of Industrial Packaging and Materials Handling Engineers into the New York area for the first time — September 19-22 — the SIPMHE board of directors has appointed chairmen to head the three major events.

Early interest in the triple-feature meeting indicates unprecedented success, reports SIPMHE. While the National Packaging and Materials Handling Show does not open at the Kingsbridge Armory until September 20, over 40% of the exhibit area is already under contract.

Serving as *general exposition chairman* is R. Chester Reed, supervisor of packages and shipping for The Texas Company. He also serves SIPMHE as president of the eastern division.

In 1950, Reed pioneered in organizing the Petroleum Packaging Committee, a committee of the Packaging Institute, of which he is a director and vice president. He has also been secretary of the Joint Container Committee of the American Petroleum Institute and the National Lubricating Grease Institute since its organization in 1950.

Selected as *chairman of the pack-*

aging and materials handling short course is Allyn C. Beardsell, vice president and general manager of the New York laboratory of Container Laboratories, Inc.

Beardsell is also serving as: chairman, Shipping Container Committee, Packaging Institute; chairman, Container Committee, American Ordnance Association; and vice president of the New York Chapter of SIPMHE.

Chosen to serve as *chairman of the protective packaging and materials handling competition* is Wilmer J. Balster, president, The Don L. Quinn Company, Chicago.

Balster is active in the following organizations besides SIPMHE: American Society of Testing Materials, Technical Association of the Pulp and Paper Industry, American Material Handling Society, Forest Products Research Society, and the Midwest Shippers Advisory Board.

The competition has been held annually since 1947. Leading designers and engineers of protective packaging and allied materials handling techniques enter into open competition for national recognition of their ability to serve commerce and industry.

End of the crating line — for water heaters produced at the South Gate, California, plant of Rheem Manufacturing Co. For highlights in the production of water heaters at this plant, see the November and December 1954 issues of finish. (For a report on packaging operations at Rheem's Chicago plant, turn to page ST-4.)



ST-12

CERTIFICATION FOR AMANA, OLSEN, VICTORY METAL

The National Safe Transit Committee has announced the certification of Amana Refrigeration, Inc., Amana, Iowa; The C. A. Olsen Manufacturing Co., Elyria, Ohio; and Victory Metal Manufacturing Corp., Plymouth Meeting, Pennsylvania.

700 ATTEND SECOND ANNUAL CANADIAN PACKAGING FORUM

Some 700 technical, production and management personnel attended the second national forum sponsored by the Technical Institute of the Packaging Association of Canada.

Held February 15, in Toronto, the meeting featured 50 experts discussing a variety of technical packaging problems at 11 concurrent forums.

CHICAGO

MILL

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RHEEM

Deliver

Safely



A lift truck operator stacks 82-gallon electric water heaters packaged in a Chicago Mill wirebound container.

Many leading appliance manufacturers depend upon Chicago Mill and Lumber Company to provide safe shipment for their finished products. They know that experienced engineers and crate designers have used the latest engineering principles and testing equipment to design the best container for their product. They know that they can count on a Chicago Mill container to deliver their valuable finished products safely.

If you are having difficulty in solving a troublesome shipping problem, call in a Chicago Mill representative. Technical information, packing information, and testing services are available without obligation.

Wirebound
Nailed or Hinge Corner
Cleated Plywood
Cleated Craveneer
Cleated Corrugated
Watkins Type Containers
Shop and Tote Boxes
Woodsteel Nesting Boxes



FOR DOMESTIC OR EXPORT
FOR PEACE OR DEFENSE

**A shipping container for
every shipping purpose**

FOR SAFER TRANSIT BY



• TRUCK



• BOAT



• TRAIN



• PLANE

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Plants at: Helena, Arkansas
Tallulah, Louisiana

• Greenville, Mississippi
• South Fork, Colorado

• Rockmart, Georgia
• Chicago, Illinois

"Our new containers cut freight costs 30%"

*says Curry W. Stoup,
American Kitchens'
General Manager*

"We knew that the *shipping package* was the key to our *shipping costs*," continued Mr. Stoup.

"So we asked Atlas Plywood to help us. They developed a lab-tested Ply-Fold crate that enabled us to pack more units to a car — enough to cut freight costs by 30%. Naturally I'm a booster for their Ply-Fold crates.

"Atlas Plywood's lab-testing methods give us other big savings, too. The new containers are stronger, so our kitchen cabinets, sinks, and dishwashers carry better. They are easier to assemble and are better all around. This is good for the customer — for our products — and the company profits. Everybody gets more for his money."



"*Kitchen beauty*" is what American Kitchens make — and what American housewives buy. Beautiful sink units like this are safely packed in Atlas Plywood Ply-Fold crates . . . can't move inside . . . stack better with more units to the car.



Ply-Fold crates come partially assembled, with smooth outer edges that permit speedy closure by air tackers. With these smooth sides there's no way for one case to damage another—a big advantage in both shipping and storing.

FREE Booklet! New, illustrated 24-page booklet, "How Atlas Plywood Cuts Your Shipping Costs . . . Safely," may help you avoid needless product damage or too-high freight costs. Write — or see your Atlas Plywood representative (see Yellow Pages). Learn about the laboratory where Atlas Plywood containers win their lab-tested label. Atlas Plywood Corporation, Dept. F-8, 1432 Statler Building, Boston 16, Mass.

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A report on NST progress

the Washington office of the National Safe Transit Committee reports on current activity, recent certifications, and quotes key personnel in certified companies

THE certification of *Amana Refrigeration, Inc.*, of Amana, Iowa, under the National Safe Transit Program has been announced by John C. Oliver, secretary, National Safe Transit Committee, Washington, D.C.

In making the announcement, Oliver quoted the following from the company's letter of application sent to the NST Committee by Paul A. Zimmerman, of Amana's engineering department:

"We have tested many new designs of crates or freezer modifications, and their adoption has been made or rejected on the outcome of your tests. We are certainly pleased with your testing program, and definitely design to meet its required results.

"Our shipping damage has been very minor or non-existent, and again we feel that it is because our products meet your pre-shipment testing. . . .

"We sincerely hope that our application will be accepted and that we will be able to display your label and car placard soon."

"The Committee is pleased to have this leading manufacturer participating in the National Safe Transit Program. We are confident that adoption of the Safe Transit labeling program alone is going to realize additional benefits for Amana Refrigeration, Inc. This will not be solitary benefits either," Oliver commented.

"As each new company adopts the labeling phase of the NST program, it adds to the tremendous impact it has made already on the nation's carriers, distributors and retailers—and thus accrues benefits for all Safe Transit certified companies."

The Washington headquarters office of the NST Committee has already announced the certification of over a dozen companies in the early months of 1955, and have a number

of applications pending approval by the Committee.

Asked for his comment on the ever increasing recognition the National Safe Transit Program is receiving from shippers throughout the country, Oliver stated that it was the testimonials of Safe Transit certified manufacturers that accounted for this growing recognition.

List company benefits

He then illustrated his point by saying that W. D. Cupps, of Westinghouse Electric Corporation's standard control division, Beaver, Penna., after using the pre-shipment testing program for a short period, listed the following benefits to his company:

1. Cost reduction on existing designs and packaging.

2. Improvement in our apparatus and package design on new apparatus that has helped us in reducing our WDC costs. R. R. Brown, design engineer, outlined these benefits as follows:

- (a) We can determine in less time the better design to use on a particular type of apparatus.

- (b) We also find it takes a lot of guesswork out of determining test of board that container and pads should be made from.

- (c) In other cases we were able to realize savings in material and labor cost.

- (d) Pre-testing has also pointed out in several cases where we would have encountered field troubles, due to corrugated board dust getting into enclosed apparatus.

- (e) Weakness in design of new apparatus has also been brought forward in several cases.

- (f) Assembly line procedures have also been changed on several items.

3. The third benefit, of course, is the improvement in quality of the apparatus we are delivering to our customers. We are now in a position to forecast the acceptance by our customers of our products without having to wait until we are in serious trouble. Probably the most important factor is the measurable standards that can be established that always make quality control problems easier."

Contrary to similar movements, the National Safe Transit Program continues to gain impetus with each new year. Asked to comment on this, R. F. Bisbee, the Committee's general chairman, said, the main reasons for the program's success are:

- 1st — *Prevention rather than cure* — is the basis of the program.

- 2nd — *It presents a direct approach to the solution* — of reducing losses in transit. Safe Transit test procedures, with a 15-year correlation background, give to the manufacturer the means for determining prior to shipment whether or not his packaged products are so designed and so packaged as to withstand normal transit conditions.

- 3rd — *Simplicity* — of the Safe Transit test procedures. If the test procedures had comprised a series of involved and complex tests, it is not likely that they would have met with wide acceptance even if they did hold the solution to transit damages. As is the case, the Safe Transit tests are easily conducted, with Project 1 requiring only two machines and one instrument, and Project 1A just two testing devices.

- 4th — *A clear-cut, objective and policy* — The committee confined its activities to the development of pre-shipment tests for the PACKAGED PRODUCT—neither the package nor the products are tested separately.

It is not the Committee's intent to interfere with the prerogative of the individual manufacturer in his design, fabrication or packaging techniques. To avoid misinterpretation as to what the vibration and shock tests represent, the Committee in the very beginning formulated the following Statement of Policy:

"If you will test your packaged products by these test procedures, experience has shown that your loss and damage and your packaging costs will be acceptable minimums. It is up to each shipper to decide whether or not he will use these test procedures. The program is entirely voluntary and implies no connection with tariffs, freight rates, claim procedures or any other existing transit regulations."

- 5th — *Cooperation* — Sponsored by the Porcelain Enamel Institute,

the National Safe Transit Program is endorsed by 19 leading associations. No pre-shipment testing program conducted by one manufacturer or even a group of manufacturers would have gained sufficient support from the

carriers or the necessary attention of handling personnel to result in real reductions in transit losses. This is only accomplished by the cooperation of all who have a part in the safe delivery of assembly line products.

1955 OFFICIAL LISTING OF CERTIFIED NST LABORATORIES

The Safe Transit Laboratory is certified under the National Safe Transit Program on the basis of having installed all the necessary equipment for conducting the Safe Transit pre-shipment tests.

Some are container firms that have equipped Safe Transit Laboratories as a service to their customers; others are independent testing laboratories that base their fees on the service rendered.

Each Safe Transit Laboratory is authorized by the National Safe Transit Committee to conduct the Safe Transit tests for manufacturers seeking certification under the NST Program, and to report to the NST Committee on whether or not a manufacturer's packaged products meet

the test requirements that have been established by the Committee.

The certified laboratories

Following is the official 1955 listing of certified laboratories:

American Gas Associations Labs.
Los Angeles, California
Atlas Plywood Corporation
Lawrence, Massachusetts
Bigelow-Garvey Lumber Company
Chicago, Illinois
Chicago Mill and Lumber Company
Chicago, Illinois
Container Corporation of America
Chicago, Illinois
Container Laboratories, Inc.
New York City, New York
Container Laboratories, Inc.
Chicago, Illinois
Cozier Container Corporation
Cleveland, Ohio
Dura-Crates, Inc.
Indianapolis, Indiana

Fort Wayne Corrugated Paper Company
Fort Wayne, Indiana
General Box Company
Des Plaines, Illinois
Highland Box Company
Highland, Illinois
The Hinde & Dauch Paper Company
Sandusky, Ohio
Indianapolis Wire Bound Box Co.
Indianapolis, Indiana
Inland Container Corporation
Indianapolis, Indiana
International Paper Company
Los Angeles, California
International Paper Company
Chicago, Illinois
International Paper Company
St. Louis, Missouri
International Paper Company
Whippany, New Jersey
International Paper Company
Wooster, Ohio
International Paper Company
Georgetown, South Carolina
L.A.B. Corporation
Skaneateles, New York
Love Box Company
Wichita, Kansas
The Mengel Company
Louisville, Kentucky
The Mengel Company
New Brunswick, New Jersey
The Mengel Company
Fulton, New York
The Mengel Company
Winston-Salem, North Carolina
The Nashville Corrugated Box Co.
Division of The Mengel Co.
Nashville, Tennessee
Ohio Boxboard Company
Rittman, Ohio
Package Research Laboratory
Rockaway, New Jersey
Packaging Service Company
Willow Grove, Pennsylvania
The Don L. Quinn Company
Chicago, Illinois
Rathborne, Hair and Ridgway Box Co.
Chicago, Illinois
Twin Cities Container Corporation
Coloma, Michigan
U. S. Testing Company, Inc.
Hoboken, New Jersey
Union Bag & Paper Corporation
Savannah, Georgia
The Weston Paper & Manufacturing Co.
Terre Haute, Indiana



NST MAIL BAG

claims are almost non-existent

To Safe Transit Committee:

During the past four years, we have tested all of our products with both the vibration machine and the impact machine.

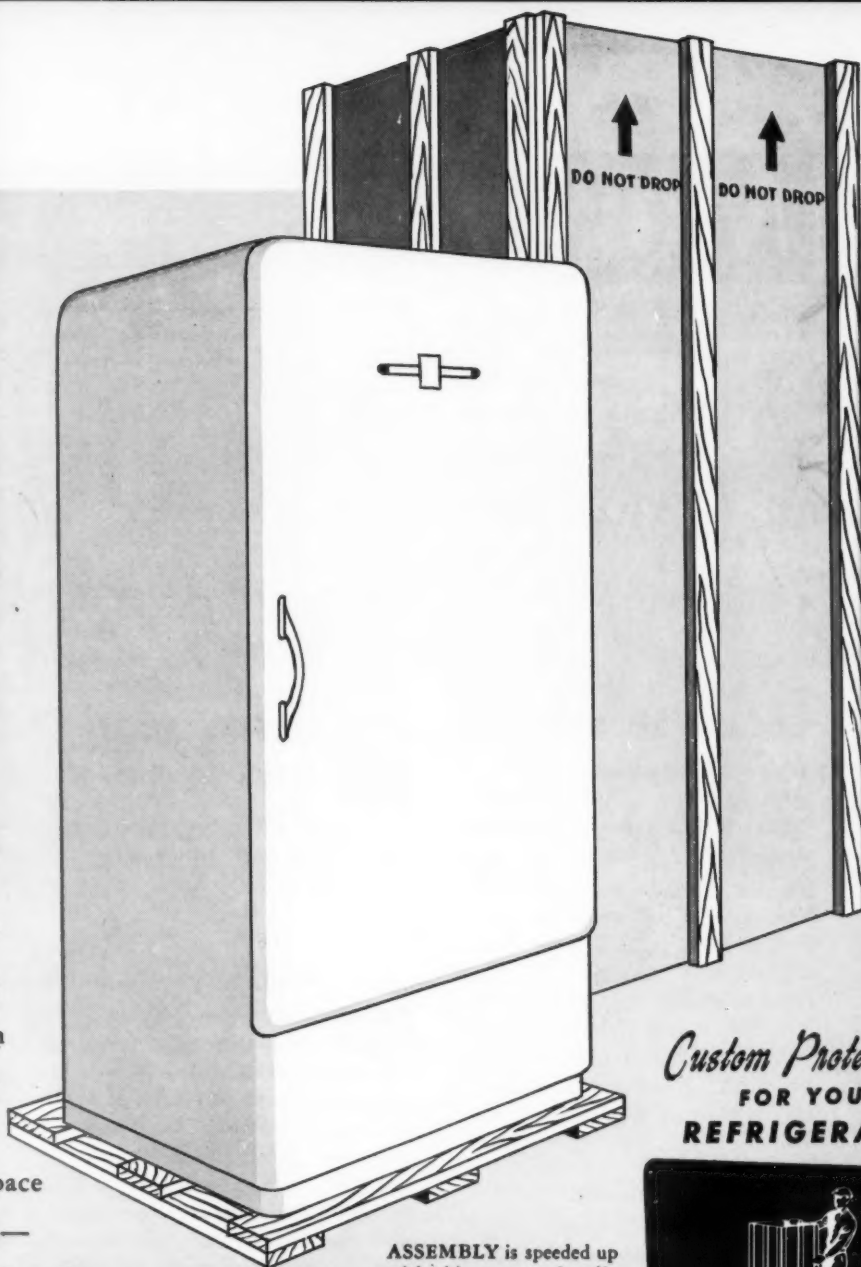
Our tests are conducted according to National Safe Transit rules, and since using these methods (both as a product and a package control) our claims have dropped to such an extent that we feel they are almost non-existent.

J. B. Coulson
Executive Traffic Manager
General Steel Wares, Ltd.
Toronto, Ontario

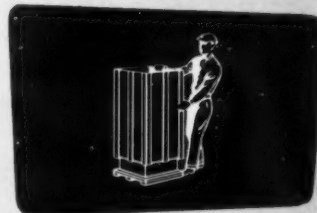
WATKINS has the container for your shipping problem

Watkins Containers provide—stacking length—ease of assembly—minimum shipping weight, thus reduced shipping costs—smooth staple-free interiors—easy handling—minimum of storage space needed—protection from dust and dirt—resistance to “weaving” and shock—“Traveling Billboard” feature for product identification and advertising.

For home appliances, for *all* types of finished products, the Watkins Container is your best insurance for safe delivery. Ship your carefully manufactured products safely and economically—ship them the Watkins Way.”



Custom Protection
FOR YOUR
REFRIGERATOR



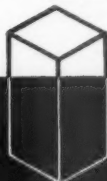
ASSEMBLY is speeded up with this easy-to-handle container. The assembly crews are all for packing the Watkins Way.

these companies build WATKINS containers

Cozier Container Corp. 446 East 131st Street, Cleveland, Ohio
Crata-Rite Mfg. Corp., Division of Pacific Ports Ind. Inc. 10901 Russett Street, Oakland, California
Dura-Crates, Inc. 940 East Michigan Street, Indianapolis, Indiana
General Box Co. 1825 Miner St., Des Plaines, Illinois, and 16th and Maple Sts., Louisville, Kentucky
Homb & Martin Mfg. Co. P. O. Box 108, Murfreesboro, Tennessee
Illinois Box & Crate Co. 811 Center Street, Plainfield, Illinois

Kieckhefer Box & Lumber Co. 1715 West Canal Street, Milwaukee, Wis
Lane Container Corp. 10212 Denton Road, Dallas, Texas
Lewisburg Container Co. 243 Singer Street, Lewisburg, Ohio
Livingston Wood Manufacturing, Ltd. Tillsonburg, Ontario, Canada
Love Mfg., Inc. 608 South Commerce Street, Wichita, Kansas
Pennsylvania Box & Lumber Co. 2331 N. Bodine St., Philadelphia 33, Pa
Utility Crate Corporation 1985 E. 16th Street, Los Angeles 21, California

—an inquiry to any of these companies will get prompt attention—



The • WATKINS CONTAINER • Manufacturers

New

Supplies and Equipment

D-10 Weld and clinch nuts offered in stainless steel

New Now available are both pilot type and counter sunk Gripco Weld Nuts in stainless steel. These weld nuts are being made both with and without the self-locking feature. Hexagon pilot clinch nuts are also available in stainless steel with and without the self-locking feature. Sizes available at present are 1-32 through 1/4", fine and coarse threads. In the near future 5/16" and 3/8" sizes will be available in both fine and coarse threads.

D-11 Rust-proofing compound

New This product was developed for the rust-proofing of engine assembly parts and for fingerprint removal or as a water soluble dip tank rust preventive to be used either cold or at high temperatures. It is either used straight or mixed with water, concentration depending on amount of rust protection needed. This product is designated as Anti-Rust No. 718.

D-12 All-metal far-infrared electric heaters

New Two new-type, all-metal far-infrared electric heaters are being made for industrial baking, drying, curing and dehydrating operations. One type is equipped with a standard medium screw base; the second type has bi-post terminals. The heaters produce longer wavelength far-infrared radiation that is absorbed by all colors of surfaces with practically equal speed, and with negligible reflection even from white surfaces. Water films, glass and other transparent materials are "opaque" to this wavelength and heat up rapidly.

The elements are "self-cleaning" in that any splashed liquids and other materials are burned off — keeping

More Information

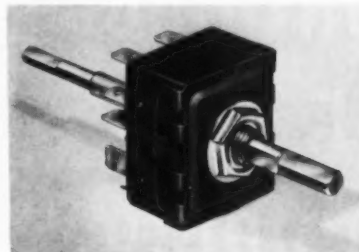
For more information on new supplies, equipment and literature reviewed here, fill out the order form, or write to us on your company stationery.

maintenance problems to an absolute minimum. Both new far-infrared elements are insulated for full safety. They are available in ratings from 375 to 1200 watts for 120 and 240 volt operation.

D-14 Small rotary switches

New A new series of small rotary switches with dual coaxial spindles to provide simplified control of a second switch, a thermostat, solenoid, damper, valve or other

electrical or mechanical unit has been developed.

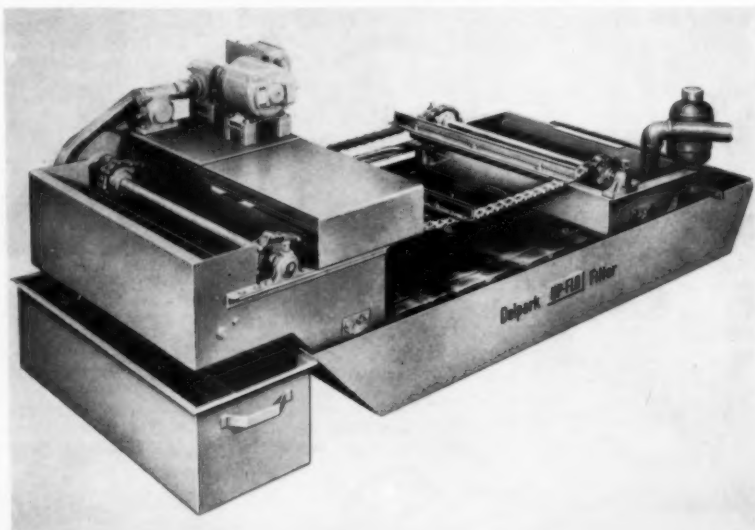


Carrying UL approved ratings up to 20 A. at 120 or 240 V. and 1/2, 3/4 and 1 horsepower at 120 V. and 2 horsepower at 240 V., A.C., with small D.C. ratings also available. The switches are said to conserve space and make possible faster and easier wiring and assembly of air conditioners, appliances such as automatic

D-13 Filter uses permanent filter media

New A new principle in automatic, self cleaning industrial filtration filters fine as well as coarse particles from liquids through a permanent filter medium. The filter utilizes gravity to remove the heavier solids before filtration of the liquid through a horizontal bar-type screen. Only the fine particles held in suspension reach the screen. The effi-

ciency of the filtration process is never impaired by deposits. Chain driven flights operating on a time lapse sequence pass under the filter and remove deposits from the underside of the screen and the area beneath the screen. These flights carry the particles to a device which cleans the flights. Filtered swarf drops into a tote box for disposal.

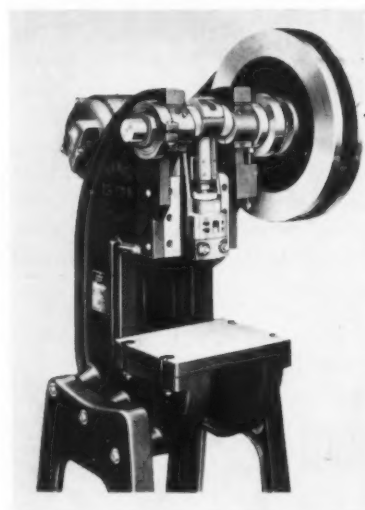


washers and similar products. The outer shaft of the spindle controls the switch itself while the inner shaft, extending through the rear of the base, provides for independent operation of the auxiliary equipment.

Bases of the new switches measure only $1\frac{1}{2}$ " x $1\frac{1}{4}$ " x $\frac{7}{8}$ " and have spade terminals for easy wiring. Dummy terminals may be added to eliminate need for separate terminal blocks. The switches are available single or double pole, two to 12 positions, with stop as required and with single, two-hole or special mounting arrangements.

D-15 15-ton punch press

New Construction features include a solid one-piece, alloy-steel crankshaft, heat treated and precision ground. Pin diameter

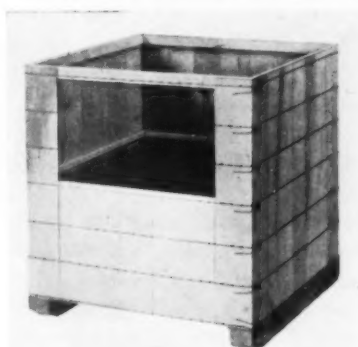


is $2\frac{3}{8}$ ". The flywheel is carried on two roller bearings. It is 20" in diameter, and weighs 200 lbs. Ram hole is $1\frac{9}{16}$ ", accommodating standard die sets. Ram area, front to back and right to left is 4" x 5". Distance from center of ram to back of press is 6". Bolster plate area: 11" x 14".

D-16 Pallet box

New This new pallet box is designed to do a multi-purpose job in industry. It is used on production lines as a small parts hopper, for intra-plant shipping of parts and as an assembly bin on pro-

duction lines. By simply removing a front section of this wirebound pallet box it becomes a handy storage bin with contents easily accessible. Boxes are made of sturdy resawn lumber, and skids are varied in de-



sign to meet the industry need. They are easily handled by lift trucks, readily hold loads up to a ton and a half or two tons and stack 3 or 4 high without damage. They provide a real material handling and storage economy.

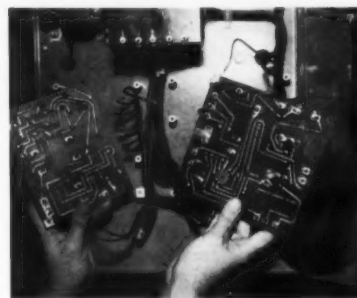
D-17 Temporary protective coating

New A new type temporary protective coating for use on stainless steel, aluminum, copper and decorative laminate surfaces, has been developed. SC-1503 is a water base sprayable compound, which air dries to form a tough, tightly adhering plastic film which can easily be removed with water. The coating will protect the surfaces through fabricating operations, such as rolling, blanking, drawing or laminating, preventing die marks, scratches, or other damage. This compound offers the advantage of being the lowest cost method of protection, being under $\frac{1}{2}$ ¢ per square foot, without any fire hazard or toxic condition in application or removal.

D-18 Control has printed circuits

New Printed circuitry and a new, simplified control system are features of a new line of full-wave Thy-mo-trol electronic adjustable-speed drives, available at prices approximately 20 per cent lower than for previous models of the same type.

Believed to be the first printed circuitry ever to be incorporated in industrial control equipment, the print-board panels can be visually inspected for circuit faults since the panels are actually current-carrying diagrams. The panels can also be removed and replaced in a few seconds time. Since the new control circuit uses only a single miniature-type con-



trol tube, as contrasted with three conventional sized tubes in previous models, maintenance on the equipment is greatly simplified.

The new design has isolated a-c control circuits that allow interconnection with a-c drives without the use of additional relays. Power tube capacity is at least 40 per cent greater than the full load current of the motor with which it is normally used. The new design is available in two ratings, $\frac{3}{4}$ to 1-hp, and $1\frac{1}{2}$ to 3-hp full wave.

D-19 New crating bolt

New For dependable, low cost shipping insurance this new crating bolt is recommended. It is pre-assembled, securely staked and will not turn with vibration. Its metal thread-cutting feature saves crating time, cuts costs. It can be quickly turned into metal foot or base of appliance. Nut is not required.

D-20 New cleaner-deruster announced

New An acid detergent designed primarily for pickling and scale-removal operations in metal-working plants has been announced. This material is reported to remove light to moderate rust, heat scale, tarnish, and other oxides, as well as normal shop dirt; and to meet specification MIL-M-10578A, Type III.

New Industrial Literature

401. Free brochure on heating ovens

New This is a 16-page descriptive brochure on infrared ovens. It describes the patented construction principles of these ovens and how they can cut your production costs.

402. "Planning to Paint a Pyramid?"

New This new brochure gives you complete information on the new Epon resin-based coatings. These new coatings are said to have excellent adhesion, high resistance to impact and abrasion plus outstanding resistance to moisture, heat and corrosives.

403. Push-button controls

New Folder No. SL-1 provides details on new push-button controls. These controls will selectively control a multiplicity of electrical loads in various combinations and two to eight multiple selectivity circuits are possible.

404. "Vitreous Enamel for Aluminum"

New Vitreous enameled aluminum can be sawed, sheared, drilled and punched without spalling, and because these rugged coatings add rigidity to aluminum sheet you can use lighter gauge aluminum. This illustrated folder will provide you with some of the facts.

405. "Phosphate Coating Comes of Age"

New An 8-page illustrated booklet "Phosphate Coating Comes of Age" is being offered. With an introduction on the use of phosphate coatings for the protection of metal surfaces, the booklet describes the seven types of conversion coatings

most commonly used in industry today and explains the mechanism of the phosphate coating formation.

406. Pressure-sensitive tapes in metalworking

New Hundreds of ways in which pressure-sensitive tapes serve the nation's metal-working industry are described in a new 56-page manual. The manual contains 311 illustrations. It is being presented as a survey of a few representative applications showing where, how, and why these tapes are used by the industry. To facilitate use the manual is divided into sections covering tape uses for machining and finishing, electroplating, stamping and fabricating, welding, product assembly, painting, packaging and shipping, plant maintenance, and various miscellaneous operations.

407. Adjustable container packing

New New 4-page folder gives complete, illustrated description of new method of packing articles or packages of different shapes and sizes. New method uses adjustable fibre board sections telescoped together to form an outer container. Folder shows, step-by-step, how various sizes of modular units can form a compact, quickly assembled container for a variety of packages. Pack is compactly unitized with steel strapping for safe, secure interstate or export shipping. Shows size chart and simple equipment recommended for complete packing operation.

408. "Safety Guide for Grinding Wheel Users"

New The pamphlet lists twenty simple safety precautions which each grinding wheel user should check when operating a grinding machine. These twenty safety points are broken down in the form

of "Do's and Don't's". The pamphlet also lists twelve publications devoted to safety which are also available, free of charge.

409. Industrial television equipment

New A 4-page folder describes new ITV-6 industrial television equipment. Features, applications and construction details on ITV-6 closed circuit television are illustrated and described in the folder. Specifications are also listed.

410. New grease

New A new 6-page brochure on a silicone fluid-carbon black mixture designed for high temperature, slow speed bearings. Performance data is featured in the brochure in the form of illustrated case histories detailing actual savings in relubrication schedules, replacement and maintenance costs. Applications discussed include oven conveyor bearings, dolly wheels, injection valves, permanent casting machines, extruder hold-down bolts, and turbine governors.

411. Free leather-cased magnet

New A handy little leather-cased magnet for quick and convenient testing of metals is offered. It is yours for the asking.

412. Flexible "packaged" liquid chiller

New The flexibility of the Flow-Therm liquid chiller for air conditioning, heat pump and industrial liquid cooling applications is emphasized in a new catalog. Major components of this factory assembled unit are matched in the exact capacity needed for efficient and economical performance, to the make and size of compressor used in the system. Single and dual circuits are included in a wide range of capacities, from 15

through 300 tons. Make up of the Flow-Therm package is explained in detail and selection procedures are given for choosing the correct components for the particular requirement.

413. Free sampler-selector

New This free sampler-selector in handy slide-chart form, gives specifications, finishes and typical uses of pre-plated metals. There are eight removable metal samples. Please request yours on your company letterhead.

414. New utility fan bulletin

New The 24-page bulletin describes in detail the advantages of the new belt-driven and direct-drive centrifugal fans, their construction features, and special features for specific types of applications. More than half of booklet is devoted to fan selection data; in this section are easy-to-use complete capacity tables for all sizes and types, roughing-in dimensions, and mechanical specifications.

415. Resistance welding

New A special bulletin, TD-22, is offered on resistance welding equipment. It explains many features which have been designed into this equipment, such as "swing out" gun mounts, easy maintenance, etc.

416. Bulletin lists products and plating processes

New A new four-page, two-color bulletin listing a line of products and electroplating & metal cleaning processes is available. Intended to serve as a handy reference guide, the bulletin lists 261 products under 63 different classifications. These products will serve every chemical and equipment requirement in the metal finishing industry. Another section outlines 17 plating and clean-

ing processes and their applications. Included in the bulletin is a description of ten technical laboratory, training and research services available to the company's customers.

417. "How Thousands of Plants Cut Costs"

New This free booklet is on infrared baking, heating and drying. It explains how you can handle these operations in your plant faster, cheaper and better. Points out that less floor space is necessary and how the baking cycle can be cut down.

418. "Science and Skill in Sheet Metals"

New This free booklet illustrates the many different jobs that this company has done for its customers and gives complete data on their facilities. This company offers facilities for stamping, finishing and assembly. Write for complete details.

419. Bulletin on finishing room air-conditioning units

New This new bulletin provides valuable information on the finishing of room air-conditioning units. It contains the latest information on coverage rates, baking schedules, metal preparation, priming and enameling. It all adds up to how you can obtain better appearance and protection for your units.

420. Free booklet on industrial porcelains

New This booklet gives complete information on this company's line of industrial porcelains. You should have it available for immediate use. Be sure and write for your copy.

421. Listing of Silastic Fabricators

New A revised listing of Silastic Fabricators names more than 80 rubber companies ready to make Silastic parts to your specification.

422. "Aluminum Appliance Parts"

New This free 20-page brochure provides complete information on this company's aluminum fabricating service. This company has the following facilities: blanking, embossing, stamping, drawing, riveting, forming, roll shaping, tube bending, welding, brazing and finishing.

423. New contact wheel

New This new R54 contact wheel is reported to cut better, faster and longer and as a result will reduce your grinding and polishing costs. You replace only the rubber tire when necessary instead of the entire wheel. There is a replaceable rubber tire with proper tread for every grinding requirement and in a wide variety of durometer ratings. Write for descriptive literature.

FINISH
York Street at Park Avenue
Elmhurst, Illinois

Please forward to me at once information on the new supplies and equipment and new industrial literature as enumerated below:

No. _____ No. _____ No. _____ No. _____
No. _____ No. _____ No. _____ No. _____
Name _____ Title _____
Company _____
Company Address _____
City _____ Zone _____ State _____

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Address reply to Box 455, c/o finish, York St. at Park Ave., Elmhurst, Ill.

FULL AUTOMATIC CLEANING & PICKLING MACHINE

Stevens automatic 140 ft. lg. with 58 in. lift. Will trade for surplus plating equipment or sacrifice for cash sale.

Kersman Equipment Co.
Muskegon, Michigan

THOR CLOSES MAIN PLANT

Thor Corp. has shut down its main plant in Cicero, Ill., but it is reported that no plans have been made to go out of business.

BALLY CASE & COOLER UPS BAUER

James Bauer has been appointed director of a newly created development department, Bally Case & Cooler Co., Bally, Pa., it has been announced by George Melcher, chief engineer.

From the editor's mail

→ from Page 24

issue of *finish*, dealing with the subject of "infra-red drying."

In our opinion this was a most interesting and informative article, and a valuable contribution to the enamelling industry.

At the same time please accept our thanks for passing on our request to Mr. Brinker of the Porcelain Enamel Institute, Washington, for three copies of the booklet "Enamel Application by Dipping."

Mr. Stone asks me to convey his very good wishes, and kindest personal regards, in appreciation of the very happy and enjoyable time which he spent with Mr. Chase during his visit to the United States with the Institute of Vitreous Enamellers back in 1938.

H. F. Stokes
Ferramic Industries Limited
Hydoway, Welwyn Garden City
Herts, England

Our respects to Messrs. Stone and Stokes and to the Institute of Vitreous Enamellers.
—Eds.